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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/047,698	01/18/2002	Seizo Suzuki	217784US2	3808

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EXAMINER

ALLEN, DENISE S

ART UNIT PAPER NUMBER

2872

DATE MAILED: 08/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/047,698	Applicant(s) SUZUKI, SEIZO	
	Examiner Denise S Allen	Art Unit 2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 March 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-62 is/are pending in the application.
- 4a) Of the above claim(s) 8-11, 19-35 and 43-62 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 12-18 and 36-42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 January 2002 and 30 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

The information disclosure statements (IDS) submitted on May 23 and November 7, 2003, and March 24, May 10, June 18, and July 9, 2004 did not include forms PTO-1449. Accordingly, it is noted here that the references listed in the information disclosure statements have been considered by the examiner.

Oath/Declaration

In light of the Application Data Sheet submitted by the Applicant on March 30, 2004, the objection to the declaration in the Office Action dated December 30, 2003 is withdrawn.

Drawings

The replacement drawings were received on March 30, 2004 and are acceptable to the examiner.

In light of the replacement drawings, the objection to the drawings in the Office Action on December 30, 2003 has been withdrawn.

Response to Arguments

Applicant's arguments with respect to claims 1, 12, and 36 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 – 7, 12 – 18, and 36 – 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aoki et al (JP 11-38348).

Regarding claims 1, 12, and 36, Aoki et al teaches a scanning image formation optical system (Figure 9 references 7' and 8) for use in an optical scanner (Figure 9) for scanning a scanned surface (reference 10) for one or more scanning lines by causing one or more coupled luminous fluxes from a light source (Figure 1 reference 1) to be incident on a deflecting reflective surface of a rotating optical deflector (reference 6), which rotates around a rotary axis of the optical deflector, said rotary axis being parallel to the deflecting reflective surface, diagonally deflecting the luminous fluxes relative to a surface perpendicular to the rotary axis of the optical deflector (Figure 1), and converging the deflected luminous fluxes toward the scanned surface by the scanning image formation optical system so as to form an optical spot on the scanned surface (Figure 9), the scanning image forming optical system comprising one special tilt surface (reference 8), said tilt surface formed such that a tilt amount of a sub-scanning cross-sectional configuration changes in a main scanning direction (Figure 10). Aoki et al does not teach the scanning image forming optical system comprising two or more special tilt surfaces.

Since Aoki et al teaches a scanning image formation optical system (Figure 1) wherein an image forming mirror (reference 7) comprises a special tilt surface (Figure 3), it would have been obvious to one of ordinary skill in the art at the time of the invention to add a special tilt surface to the image forming mirror (reference 7') in addition to the special tilt surface on the optical path bending mirror (reference 8) of the scanning image formation optical system (Figure 9) of Aoki et al in order to provide additional degrees of freedom for correcting aberrations.

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Regarding claims 2, 13, and 37, Aoki et al teaches the two or more special tilt surfaces are formed so as to correct a scanning line curvature and a wavefront aberration on the scanned surface (Figure 11).

Regarding claims 3, 14, and 38, Aoki et al teaches the scanning image formation optical system includes two or more optical elements (references 7' and 8), and wherein at least two of the two or more special tilt surfaces are formed on different optical elements of the two or more optical elements (on references 7' and 8).

Regarding claims 4 – 7, 15 – 18, and 39 – 42, Aoki et al teaches a scanning image forming optical system as described above. Aoki et al does not teach that one or more of the two or more optical elements is a lens, but rather that they are mirrors.

It would have been obvious to one of ordinary skill in the art at the time of the invention to replace one or more of the mirrors containing the special tilt surfaces of Aoki et al with lenses containing special tilt surfaces in order to reduce the vertical dimension of the optical scanner by eliminating the folding of the optical path.

Regarding claim 12, Aoki et al teaches a coupling device (references 2 and 5).

Regarding claim 36, Aoki et al teaches a photosensitive medium (reference 10).

Conclusion

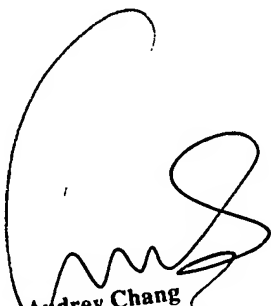
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Denise S Allen whose telephone number is (571) 272-2305. The examiner can normally be reached on Monday - Friday, 9:00am - 5:30pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew A Dunn can be reached on (571) 272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Denise S Allen
Examiner
Art Unit 2872


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